

III. REMARKS

Claims 4 and 7 have been amended to correct the lack of antecedent problem. Thus claims 4 and 7 now conform to 35 USC 112, 2nd paragraph.

Cygan discloses a method and an arrangement for avoiding an isolator in a radio transmitter. The electromagnetic fields propagating towards the antenna and reflected therefrom are measured by means of a directional coupler. From the measured results (116, 118), a variable matching circuit between the power amplifier and the directional coupler is controlled. That principle is the same as in the present invention. However following differences can be found:

- Cygan does not disclose the use of a circulator as a directional coupler. (A usual directional coupler is a different thing from a circulator.)
- Cygan does not disclose a tuning arrangement for two operation bands.
- The directional element is located between the matching circuit and antenna. In the present structure the directional element is located directly after the power amplifier.
- The information about the strength of the transmitting field is obtained from the directional coupler. In the present structure that information is obtained directly from the power amplifier.

Green discloses a radio device, in which transmitting and receiving are separated by means of time division technique (TDD, time division duplex). The aim is to prevent the energy of the reflected signal to end up back into the power amplifier during transmitting periods. That is implemented by steering the reflected signal to a separate load (38) by means of a circulator being located in the transmission path before the antenna. An antenna switch (150), necessary when using the TDD, is located in that branch of the circulator which leads to said load. During the receiving periods, the antenna switch steers the signal coming from the antenna to the receiver (1) instead of to said load.

Green differs from the present arrangement such that it has no matching circuit controlled by a signal obtained from the circulator. The Examiner speaks (page 3) about combining Cygan and Green so that a half duplex transceiver, supposedly equipped with a circulator, is formed. However, the Examiner does not tell how the combining would be implemented. It can be imagined that Cygan's directional coupler is replaced by Green's circulator and antenna switch, and during the transmitting phases the reflected signal is steered, instead of the load (38), to Cygan's processor (110). However, after that change the resulting structure can be applied only to half duplex radios, which limitation is not valid for the present structure. Moreover, in the resulting structure the directional element is not connected directly to the output of the power amplifier, as in the present structure.

Claim 1 has been amended to incorporate claim 5.

In paragraph 7 of the Action the Examiner contends that the dual band application according to claim 5 is obvious to one of ordinary skill in the art, on grounds of Cygan in view of Green and Zhou. However, Zhou relates to matching a whip element in two separate bands, i.e., it is in question a way to implement a dual band antenna. In the present invention, the changes of the antenna impedance, caused by external conducting objects, are compensated in two separate bands (page 1, lines 18-25, and page 4, lines 11-23). This is quite a different thing than implementing a dual band antenna. Zhou is not at all combinable with the Cygan and Green. Even if there references are somehow combined, the result is not the present invention as explained above.

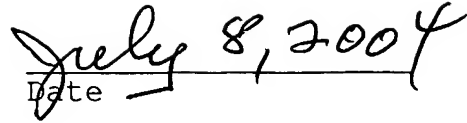
For all of the foregoing reasons, it is respectfully submitted that all of the claims now present in the application are clearly novel and patentable over the prior art of record, and are in proper form for allowance. Accordingly, favorable reconsideration and allowance is respectfully requested. Should any unresolved issues remain, the Examiner is invited to call Applicants' attorney at the telephone number indicated below.

The Commissioner is hereby authorized to charge payment for any fees associated with this communication or credit any over payment to Deposit Account No. 16-1350.

Respectfully submitted,


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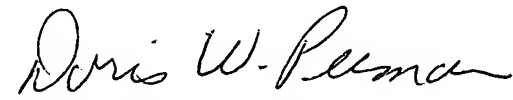

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